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PATENT & TRADEMARK OFFICE

SEQUENCE LISTING

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HARTH, GUNTER
LEE, BAI-YU

<120> ABUNDANT EXTRACELLULAR PRODUCTS AND METHODS FOR THEIR PRODUCTION AND USE

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<141> 2003-10-27

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<150> 08/568,357
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1 5 10 15

<210> 77
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 77
Val Ala Asn Asn Thr Arg Leu Trp Val Tyr Cys Gly Asn Gly Thr
1 5 10 15

<210> 78
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 78
Arg Leu Trp Val Tyr Cys Gly Asn Gly Thr Pro Asn Glu Leu Gly
1 5 10 15

<210> 79
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 79
Cys Gly Asn Gly Thr Pro Asn Glu Leu Gly Gly Ala Asn Ile Pro
1 5 10 15

<210> 80
<211> 15
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<213> Mycobacterium tuberculosis

<400> 80
Pro Asn Glu Leu Gly Gly Ala Asn Ile Pro Ala Glu Phe Leu Glu
1 5 10 15

<210> 81
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 81
Gly Ala Asn Ile Pro Ala Glu Phe Leu Glu Asn Phe Val Arg Ser
1 5 10 15

<210> 82
<211> 15
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<213> Mycobacterium tuberculosis

<400> 82
Ala Glu Phe Leu Glu Asn Phe Val Arg Ser Ser Asn Leu Lys Phe
1 5 10 15

<210> 83
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 83
Asn Phe Val Arg Ser Ser Asn Leu Lys Phe Gln Asp Ala Tyr Asn
1 5 10 15

<210> 84
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

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Ser Asn Leu Lys Phe Gln Asp Ala Tyr Asn Ala Ala Gly Gly His
1 5 10 15

<210> 85
<211> 15
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<213> Mycobacterium tuberculosis

<400> 85
Gln Asp Ala Tyr Asn Ala Ala Gly Gly His Asn Ala Val Phe Asn
1 5 10 15

<210> 86
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 86
Ala Ala Gly Gly His Asn Ala Val Phe Asn Phe Pro Pro Asn Gly
1 5 10 15

<210> 87
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 87
Asn Ala Val Phe Asn Phe Pro Pro Asn Gly Thr His Ser Trp Glu
1 5 10 15

<210> 88
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 88
Phe Pro Pro Asn Gly Thr His Ser Trp Glu Tyr Trp Gly Ala Gln
1 5 10 15

<210> 89
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 89
Thr His Ser Trp Glu Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys
1 5 10 15

<210> 90
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 90
Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser
1 5 10 15

<210> 91
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 91
Leu Asn Ala Met Lys Gly Asp Leu Gln Ser Ser Leu Gly Ala Gly
1 5 10 15

<210> 92
<211> 480
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(480)

<400> 92
atg aag ctc acc aca atg atc aag acg gca gta gcg gtc gtg gcc atg 48
Met Lys Leu Thr Thr Met Ile Lys Thr Ala Val Ala Val Val Ala Met
1 5 10 15

gcg gcc atc gcg acc ttt gcg gca ccg gtc gcg ttg gct gcc tat ccc 96
Ala Ala Ile Ala Thr Phe Ala Ala Pro Val Ala Leu Ala Ala Tyr Pro
20 25 30

atc acc gaa aaa ctt ggc agt gag cta acg atg acc gac acc gtt ggc 144
Ile Thr Glu Lys Leu Gly Ser Glu Leu Thr Met Thr Asp Thr Val Gly
35 40 45

caa gtc gtg ctc ggc tgg aag gtc agt gat ctc aaa tcc agc acg gca 192
Gln Val Val Leu Gly Trp Lys Val Ser Asp Leu Lys Ser Ser Thr Ala
50 55 60

```
gtc atc ccc ggc tat ccg gtg gcc ggc cag gtc tgg gag gcc act gcc   240
Val Ile Pro Gly Tyr Pro Val Ala Gly Gln Val Trp Glu Ala Thr Ala
 65                  70                  75                  80

acg gtc aat gcg att cgc ggc agc gtc acg ccc gcg gtc tcg cag ttc   288
Thr Val Asn Ala Ile Arg Gly Ser Val Thr Pro Ala Val Ser Gln Phe
                85                  90                  95

aat gcc cgc acc gcc gac ggc atc aac tac cgg gtg ctg tgg caa gcc   336
Asn Ala Arg Thr Ala Asp Gly Ile Asn Tyr Arg Val Leu Trp Gln Ala
            100                 105                 110

gcg ggc ccc gac acc att agc gga gcc act atc ccc caa ggc gaa caa   384
Ala Gly Pro Asp Thr Ile Ser Gly Ala Thr Ile Pro Gln Gly Glu Gln
        115                 120                 125

tcg acc ggc aaa atc tac ttc gat gtc acc ggc cca tcg cca acc atc   432
Ser Thr Gly Lys Ile Tyr Phe Asp Val Thr Gly Pro Ser Pro Thr Ile
    130                 135                 140

gtc gcg atg aac aac ggc atg gag gat ctg ctg att tgg gag ccg tag   480
Val Ala Met Asn Asn Gly Met Glu Asp Leu Leu Ile Trp Glu Pro
145                 150                 155                 160
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<210> 93
<211> 1437
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(1434)

<400> 93

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gtg acg gaa aag acg ccc gac gac gtc ttc aaa ctt gcc aag gac gag    48
Val Thr Glu Lys Thr Pro Asp Asp Val Phe Lys Leu Ala Lys Asp Glu
  1               5                  10                  15

aag gtc gaa tat gtc gac gtc cgg ttc tgt gac ctg cct ggc atc atg    96
Lys Val Glu Tyr Val Asp Val Arg Phe Cys Asp Leu Pro Gly Ile Met
             20                  25                  30

cag cac ttc acg att ccg gct tcg gcc ttt gac aag agc gtg ttt gac   144
Gln His Phe Thr Ile Pro Ala Ser Ala Phe Asp Lys Ser Val Phe Asp
         35                  40                  45

gac ggc ttg gcc ttt gac ggc tcg tcg att cgc ggg ttc cag tcg atc   192
Asp Gly Leu Ala Phe Asp Gly Ser Ser Ile Arg Gly Phe Gln Ser Ile
     50                  55                  60
```

```
cac gaa tcc gac atg ttg ctt ctt ccc gat ccc gag acg gcg cgc atc   240
His Glu Ser Asp Met Leu Leu Leu Pro Asp Pro Glu Thr Ala Arg Ile
 65                  70                  75                  80

gac ccg ttc cgc gcg gcc aag acg ctg aat atc aac ttc ttt gtg cac   288
Asp Pro Phe Arg Ala Ala Lys Thr Leu Asn Ile Asn Phe Phe Val His
                85                  90                  95

gac ccg ttc acc ctg gag ccg tac tcc cgc gac ccg cgc aac atc gcc   336
Asp Pro Phe Thr Leu Glu Pro Tyr Ser Arg Asp Pro Arg Asn Ile Ala
            100                 105                 110

cgc aag gcc gag aac tac ctg atc agc act ggc atc gcc gac acc gca   384
Arg Lys Ala Glu Asn Tyr Leu Ile Ser Thr Gly Ile Ala Asp Thr Ala
        115                 120                 125

tac ttc ggc gcc gag gcc gag ttc tac att ttc gat tcg gtg agc ttc   432
Tyr Phe Gly Ala Glu Ala Glu Phe Tyr Ile Phe Asp Ser Val Ser Phe
    130                 135                 140

gac tcg cgc gcc aac ggc tcc ttc tac gag gtg gac gcc atc tcg ggg   480
Asp Ser Arg Ala Asn Gly Ser Phe Tyr Glu Val Asp Ala Ile Ser Gly
145                 150                 155                 160

tgg tgg aac acc ggc gcg gcg acc gag gcc gac ggc agt ccc aac cgg   528
Trp Trp Asn Thr Gly Ala Ala Thr Glu Ala Asp Gly Ser Pro Asn Arg
                165                 170                 175

ggc tac aag gtc cgc cac aag ggc ggg tat ttc cca gtg gcc ccc aac   576
Gly Tyr Lys Val Arg His Lys Gly Gly Tyr Phe Pro Val Ala Pro Asn
            180                 185                 190

gac caa tac gtc gac ctg cgc gac aag atg ctg acc aac ctg atc aac   624
Asp Gln Tyr Val Asp Leu Arg Asp Lys Met Leu Thr Asn Leu Ile Asn
        195                 200                 205

tcc ggc ttc atc ctg gag aag ggc cac cac gag gtg ggc agc ggc gga   672
Ser Gly Phe Ile Leu Glu Lys Gly His His Glu Val Gly Ser Gly Gly
    210                 215                 220

cag gcc gag atc aac tac cag ttc aat tcg ctg ctg cac gcc gcc gac   720
Gln Ala Glu Ile Asn Tyr Gln Phe Asn Ser Leu Leu His Ala Ala Asp
225                 230                 235                 240

gac atg cag ttg tac aag tac atc atc aag aac acc gcc tgg cag aac   768
Asp Met Gln Leu Tyr Lys Tyr Ile Ile Lys Asn Thr Ala Trp Gln Asn
                245                 250                 255

ggc aaa acg gtc acg ttc atg ccc aag ccg ctg ttc ggc gac aac ggg   816
Gly Lys Thr Val Thr Phe Met Pro Lys Pro Leu Phe Gly Asp Asn Gly
            260                 265                 270
```

```
tcc ggc atg cac tgt cat cag tcg ctg tgg aag gac ggg gcc ccg ctg   864
Ser Gly Met His Cys His Gln Ser Leu Trp Lys Asp Gly Ala Pro Leu
        275                 280                 285

atg tac gac gag acg ggt tat gcc ggt ctg tcg gac acg gcc cgt cat   912
Met Tyr Asp Glu Thr Gly Tyr Ala Gly Leu Ser Asp Thr Ala Arg His
    290                 295                 300

tac atc ggc ggc ctg tta cac cac gcg ccg tcg ctg ctg gcc ttc acc   960
Tyr Ile Gly Gly Leu Leu His His Ala Pro Ser Leu Leu Ala Phe Thr
305                 310                 315                 320

aac ccg acg gtg aac tcc tac aag cgg ctg gtt ccc ggt tac gag gcc   1008
Asn Pro Thr Val Asn Ser Tyr Lys Arg Leu Val Pro Gly Tyr Glu Ala
                325                 330                 335

ccg atc aac ctg gtc tat agc cag cgc aac cgg tcg gca tgc gtg cgc   1056
Pro Ile Asn Leu Val Tyr Ser Gln Arg Asn Arg Ser Ala Cys Val Arg
            340                 345                 350

atc ccg atc acc ggc agc aac ccg aag gcc aag cgg ctg gag ttc cga   1104
Ile Pro Ile Thr Gly Ser Asn Pro Lys Ala Lys Arg Leu Glu Phe Arg
        355                 360                 365

agc ccc gac tcg tcg ggc aac ccg tat ctg gcg ttc tcg gcc atg ctg   1152
Ser Pro Asp Ser Ser Gly Asn Pro Tyr Leu Ala Phe Ser Ala Met Leu
    370                 375                 380

atg gca ggc ctg gac ggt atc aag aac aag atc gag ccg cag gcg ccc   1200
Met Ala Gly Leu Asp Gly Ile Lys Asn Lys Ile Glu Pro Gln Ala Pro
385                 390                 395                 400

gtc gac aag gat ctc tac gag ctg ccg ccg gaa gag gcc gcg agt atc   1248
Val Asp Lys Asp Leu Tyr Glu Leu Pro Pro Glu Glu Ala Ala Ser Ile
                405                 410                 415

ccg cag act ccg acc cag ctg tca gat gtg atc gac cgt ctc gag gcc   1296
Pro Gln Thr Pro Thr Gln Leu Ser Asp Val Ile Asp Arg Leu Glu Ala
            420                 425                 430

gac cac gaa tac ctc acc gaa gga ggg gtg ttc aca aac gac ctg atc   1344
Asp His Glu Tyr Leu Thr Glu Gly Gly Val Phe Thr Asn Asp Leu Ile
        435                 440                 445

gag acg tgg atc agt ttc aag cgc gaa aac gag atc gag ccg gtc aac   1392
Glu Thr Trp Ile Ser Phe Lys Arg Glu Asn Glu Ile Glu Pro Val Asn
    450                 455                 460

atc cgg ccg cat ccc tac gaa ttc gcg ctg tac tac gac gtt taa       1437
Ile Arg Pro His Pro Tyr Glu Phe Ala Leu Tyr Tyr Asp Val
465                 470                 475
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<210> 94
<211> 687
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(687)

<400> 94

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gtg cgc atc aag atc ttc atg ctg gtc acg gct gtc gtt ttg ctc tgt   48
Val Arg Ile Lys Ile Phe Met Leu Val Thr Ala Val Val Leu Leu Cys
  1               5                  10                  15

tgt tcg ggt gtg gcc acg gcc gcg ccc aag acc tac tgc gag gag ttg   96
Cys Ser Gly Val Ala Thr Ala Ala Pro Lys Thr Tyr Cys Glu Glu Leu
             20                  25                  30

aaa ggc acc gat acc ggc cag gcg tgc cag att caa atg tcc gac ccg   144
Lys Gly Thr Asp Thr Gly Gln Ala Cys Gln Ile Gln Met Ser Asp Pro
         35                  40                  45

gcc tac aac atc aac atc agc ctg ccc agt tac tac ccc gac cag aag   192
Ala Tyr Asn Ile Asn Ile Ser Leu Pro Ser Tyr Tyr Pro Asp Gln Lys
     50                  55                  60

tcg ctg gaa aat tac atc gcc cag acg cgc gac aag ttc ctc agc gcg   240
Ser Leu Glu Asn Tyr Ile Ala Gln Thr Arg Asp Lys Phe Leu Ser Ala
 65                  70                  75                  80

gcc aca tcg tcc act cca cgc gaa gcc ccc tac gaa ttg aat atc acc   288
Ala Thr Ser Ser Thr Pro Arg Glu Ala Pro Tyr Glu Leu Asn Ile Thr
                 85                  90                  95

tcg gcc aca tac cag tcc gcg ata ccg ccg cgt ggt acg cag gcc gtg   336
Ser Ala Thr Tyr Gln Ser Ala Ile Pro Pro Arg Gly Thr Gln Ala Val
            100                 105                 110

gtg ctc aag gtc tac cag aac gcc ggc ggc acg cac cca acg acc acg   384
Val Leu Lys Val Tyr Gln Asn Ala Gly Gly Thr His Pro Thr Thr Thr
        115                 120                 125

tac aag gcc ttc gat tgg gac cag gcc tat cgc aag cca atc acc tat   432
Tyr Lys Ala Phe Asp Trp Asp Gln Ala Tyr Arg Lys Pro Ile Thr Tyr
    130                 135                 140

gac acg ctg tgg cag gct gac acc gat ccg ctg cca gtc gtc ttc ccc   480
Asp Thr Leu Trp Gln Ala Asp Thr Asp Pro Leu Pro Val Val Phe Pro
145                 150                 155                 160

att gtg caa ggt gaa ctg agc aag cag acc gga caa cag gta tcg ata   528
Ile Val Gln Gly Glu Leu Ser Lys Gln Thr Gly Gln Gln Val Ser Ile
                165                 170                 175
```

```
gcg ccg aat gcc ggc ttg gac ccg gtg aat tat cag aac ttc gca gtc   576
Ala Pro Asn Ala Gly Leu Asp Pro Val Asn Tyr Gln Asn Phe Ala Val
            180                 185                 190

acg aac gac ggg gtg att ttc ttc ttc aac ccg ggg gag ttg ctg ccc   624
Thr Asn Asp Gly Val Ile Phe Phe Phe Asn Pro Gly Glu Leu Leu Pro
        195                 200                 205

gaa gca gcc ggc cca acc cag gta ttg gtc cca cgt tcc gcg atc gac   672
Glu Ala Ala Gly Pro Thr Gln Val Leu Val Pro Arg Ser Ala Ile Asp
    210                 215                 220

tcg atg ctg gcc tag                                           687
Ser Met Leu Ala
225
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<210> 95
<211> 900
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(900)

<400> 95

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atg aag ggt cgg tcg gcg ctg ctg cgg gcg ctc tgg att gcc gca ctg   48
Met Lys Gly Arg Ser Ala Leu Leu Arg Ala Leu Trp Ile Ala Ala Leu
  1               5                  10                  15

tca ttc ggg ttg ggc ggt gtc gcg gta gcc gcg gaa ccc acc gcc aag   96
Ser Phe Gly Leu Gly Gly Val Ala Val Ala Ala Glu Pro Thr Ala Lys
            20                  25                  30

gcc gcc cca tac gag aac ctg atg gtg ccg tcg ccc tcg atg ggc cgg   144
Ala Ala Pro Tyr Glu Asn Leu Met Val Pro Ser Pro Ser Met Gly Arg
        35                  40                  45

gac atc ccg gtg gcc ttc cta gcc ggt ggg ccg cac gcg gtg tat ctg   192
Asp Ile Pro Val Ala Phe Leu Ala Gly Gly Pro His Ala Val Tyr Leu
    50                  55                  60

ctg gac gcc ttc aac gcc ggc ccg gat gtc agt aac tgg gtc acc gcg   240
Leu Asp Ala Phe Asn Ala Gly Pro Asp Val Ser Asn Trp Val Thr Ala
65                  70                  75                  80

ggt aac gcg atg aac acg ttg gcg ggc aag ggg att tcg gtg gtg gca   288
Gly Asn Ala Met Asn Thr Leu Ala Gly Lys Gly Ile Ser Val Val Ala
                85                  90                  95
```

```
ccg gcc ggt ggt gcg tac agc atg tac acc aac tgg gag cag gat ggc   336
Pro Ala Gly Gly Ala Tyr Ser Met Tyr Thr Asn Trp Glu Gln Asp Gly
            100                 105                 110

agc aag cag tgg gac acc ttc ttg tcc gct gag ctg ccc gac tgg ctg   384
Ser Lys Gln Trp Asp Thr Phe Leu Ser Ala Glu Leu Pro Asp Trp Leu
        115                 120                 125

gcc gct aac cgg ggc ttg gcc ccc ggt ggc cat gcg gcc gtt ggc gcc   432
Ala Ala Asn Arg Gly Leu Ala Pro Gly Gly His Ala Ala Val Gly Ala
    130                 135                 140

gct cag ggc ggt tac ggg gcg atg gcg ctg gcg gcc ttc cac ccc gac   480
Ala Gln Gly Gly Tyr Gly Ala Met Ala Leu Ala Ala Phe His Pro Asp
145                 150                 155                 160

cgc ttc ggc ttc gct ggc tcg atg tcg ggc ttt ttg tac ccg tcg aac   528
Arg Phe Gly Phe Ala Gly Ser Met Ser Gly Phe Leu Tyr Pro Ser Asn
                165                 170                 175

acc acc acc aac ggt gcg atc gcg gcg ggc atg cag caa ttc ggc ggt   576
Thr Thr Thr Asn Gly Ala Ile Ala Ala Gly Met Gln Gln Phe Gly Gly
            180                 185                 190

gtg gac acc aac gga atg tgg gga gca cca cag ctg ggt cgg tgg aag   624
Val Asp Thr Asn Gly Met Trp Gly Ala Pro Gln Leu Gly Arg Trp Lys
        195                 200                 205

tgg cac gac ccg tgg gtg cat gcc agc ctg ctg gcg caa aac aac acc   672
Trp His Asp Pro Trp Val His Ala Ser Leu Leu Ala Gln Asn Asn Thr
    210                 215                 220

cgg gtg tgg gtg tgg agc ccg acc aac ccg gga gcc agc gat ccc gcc   720
Arg Val Trp Val Trp Ser Pro Thr Asn Pro Gly Ala Ser Asp Pro Ala
225                 230                 235                 240

gcc atg atc ggc caa gcc gcc gag gcg atg ggt aac agc cgc atg ttc   768
Ala Met Ile Gly Gln Ala Ala Glu Ala Met Gly Asn Ser Arg Met Phe
                245                 250                 255

tac aac cag tat cgc agc gtc ggc ggg cac aac gga cac ttc gac ttc   816
Tyr Asn Gln Tyr Arg Ser Val Gly Gly His Asn Gly His Phe Asp Phe
            260                 265                 270

cca gcc agc ggt gac aac ggc tgg ggc tcg tgg gcg ccc cag ctg ggc   864
Pro Ala Ser Gly Asp Asn Gly Trp Gly Ser Trp Ala Pro Gln Leu Gly
        275                 280                 285

gct atg tcg ggc gat atc gtc ggt gcg atc cgc taa                   900
Ala Met Ser Gly Asp Ile Val Gly Ala Ile Arg
    290                 295                 300
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<210> 96
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<212> PRT
<213> Mycobacterium tuberculosis

<400> 96
Phe Ser Arg Pro Gly Leu Pro Val Glu Tyr Leu Gln Val Pro Ser
1 5 10 15

<210> 97
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 97
Leu Pro Val Glu Tyr Leu Gln Val Pro Ser Pro Ser Met Gly Arg
1 5 10 15

<210> 98
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Leu Gln Val Pro Ser Pro Ser Met Gly Arg Asp Ile Lys Val Gln
1 5 10 15

<210> 99
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 99
Pro Ser Met Gly Arg Asp Ile Lys Val Gln Phe Gln Ser Gly Gly
1 5 10 15

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<400> 100
Asp Ile Lys Val Gln Phe Gln Ser Gly Gly Ala Asn Ser Pro Ala
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<210> 101
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<212> PRT
<213> Mycobacterium tuberculosis

<400> 101
Phe Gln Ser Gly Gly Ala Asn Ser Pro Ala Leu Tyr Leu Leu Asp
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<210> 102
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<400> 102
Ala Asn Ser Pro Ala Leu Tyr Leu Leu Asp Gly Leu Arg Ala Gln
1 5 10 15

<210> 103
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 103
Leu Tyr Leu Leu Asp Gly Leu Arg Ala Gln Asp Asp Phe Ser Gly
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<210> 104
<211> 15
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<400> 104
Gly Leu Arg Ala Gln Asp Asp Phe Ser Gly Trp Asp Ile Asn Thr
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<210> 105
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<400> 105
Asp Asp Phe Ser Gly Trp Asp Ile Asn Thr Pro Ala Phe Glu Trp
1 5 10 15

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Trp Asp Ile Asn Thr Pro Ala Phe Glu Trp Tyr Asp Gln Ser Gly
1 5 10 15

<210> 107
<211> 15
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<400> 107
Pro Ala Phe Glu Trp Tyr Asp Gln Ser Gly Leu Ser Val Val Met
1 5 10 15

<210> 108
<211> 16
<212> PRT
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<400> 108
Tyr Asp Gln Ser Gly Leu Ser Val Val Met Pro Val Val Gly Gly Gln
1 5 10 15

<210> 109
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 109
Leu Ser Val Val Met Pro Val Gly Gly Gln Ser Ser Phe Tyr Ser
1 5 10 15

<210> 110
<211> 15
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<400> 110
Pro Val Gly Gly Gln Ser Ser Phe Tyr Ser Asp Trp Tyr Gln Pro
1 5 10 15

<210> 111
<211> 15
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<213> Mycobacterium tuberculosis

<400> 111
Ser Ser Phe Tyr Ser Asp Trp Tyr Gln Pro Ala Cys Gly Lys Ala
1 5 10 15

<210> 112
<211> 15
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<213> Mycobacterium tuberculosis

<400> 112
Asp Trp Tyr Gln Pro Ala Cys Gly Lys Ala Gly Cys Gln Thr Tyr
1 5 10 15

<210> 113
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 113
Ala Cys Gly Lys Ala Gly Cys Gln Thr Tyr Lys Trp Glu Thr Phe
1 5 10 15

<210> 114
<211> 15
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<400> 114
Gly Cys Gln Thr Tyr Lys Trp Glu Thr Phe Leu Thr Ser Glu Leu
1 5 10 15

<210> 115
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<400> 115
Lys Trp Glu Thr Phe Leu Thr Ser Glu Leu Pro Gly Trp Leu Gln
1 5 10 15

<210> 116
<211> 15
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Leu Thr Ser Glu Leu Pro Gly Trp Leu Gln Ala Asn Arg His Val
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<210> 117
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<400> 117
Pro Gly Trp Leu Gln Ala Asn Arg His Val Lys Pro Thr Gly Ser
1 5 10 15

<210> 118
<211> 15
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<400> 118
Ala Asn Arg His Val Lys Pro Thr Gly Ser Ala Val Val Gly Leu
1 5 10 15

<210> 119
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<400> 119
Lys Pro Thr Gly Ser Ala Val Val Gly Leu Ser Met Ala Ala Ser
1 5 10 15

<210> 120
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<400> 120
Ala Val Val Gly Leu Ser Met Ala Ala Ser Ser Ala Leu Thr Leu
1 5 10 15

<210> 121
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<213> Mycobacterium tuberculosis

<400> 121
Ser Met Ala Ala Ser Ser Ala Leu Thr Leu Ala Ile Tyr His Pro
1 5 10 15

<210> 122
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<400> 122
Ser Ala Leu Thr Leu Ala Ile Tyr His Pro Gln Gln Phe Val Tyr
1 5 10 15

<210> 123
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Ala Ile Tyr His Pro Gln Gln Phe Val Tyr Ala Gly Ala Met Ser
1 5 10 15

<210> 124
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<400> 124
Gln Gln Phe Val Tyr Ala Gly Ala Met Ser Gly Leu Leu Asp Pro
1 5 10 15

<210> 125
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<213> Mycobacterium tuberculosis

<400> 125
Ala Gly Ala Met Ser Gly Leu Leu Asp Pro Ser Gln Ala Met Gly
1 5 10 15

<210> 126
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<213> Mycobacterium tuberculosis

<400> 126
Gly Leu Leu Asp Pro Ser Gln Ala Met Gly Pro Thr Leu Ile Gly
1 5 10 15

<210> 127
<211> 15
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<213> Mycobacterium tuberculosis

<400> 127
Ser Gln Ala Met Gly Pro Thr Leu Ile Gly Leu Ala Met Gly Asp
1 5 10 15

<210> 128
<211> 15
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<213> Mycobacterium tuberculosis

<400> 128
Pro Thr Leu Ile Gly Leu Ala Met Gly Asp Ala Gly Gly Tyr Lys
1 5 10 15

<210> 129
<211> 15
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<213> Mycobacterium tuberculosis

<400> 129
Leu Ala Met Gly Asp Ala Gly Gly Tyr Lys Ala Ser Asp Met Trp
1 5 10 15

<210> 130
<211> 15
<212> PRT
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<400> 130
Ala Gly Gly Tyr Lys Ala Ser Asp Met Trp Gly Pro Lys Glu Asp
1 5 10 15

<210> 131
<211> 15
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<400> 131
Ala Ser Asp Met Trp Gly Pro Lys Glu Asp Pro Ala Trp Gln Arg
1 5 10 15

<210> 132
<211> 15
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<213> Mycobacterium tuberculosis

<400> 132
Gly Pro Lys Glu Asp Pro Ala Trp Gln Arg Asn Asp Pro Leu Leu
1 5 10 15

<210> 133
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 133
Pro Ala Trp Gln Arg Asn Asp Pro Leu Leu Asn Val Gly Lys Leu
1 5 10 15

<210> 134
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 134
Asn Asp Pro Leu Leu Asn Val Gly Lys Leu Ile Ala Asn Asn Thr
1 5 10 15

<210> 135
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 135
Asn Val Gly Lys Leu Ile Ala Asn Asn Thr Arg Val Trp Val Tyr
1 5 10 15

<210> 136
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 136
Ile Ala Asn Asn Thr Arg Val Trp Val Tyr Cys Gly Asn Gly Lys
1 5 10 15

<210> 137
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 137
Arg Val Trp Val Tyr Cys Gly Asn Gly Lys Pro Ser Asp Leu Gly
1 5 10 15

<210> 138
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 138
Cys Gly Asn Gly Lys Pro Ser Asp Leu Gly Gly Asn Asn Leu Pro
1 5 10 15

<210> 139
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 139
Pro Ser Asp Leu Gly Gly Asn Asn Leu Pro Ala Lys Phe Leu Glu
1 5 10 15

<210> 140
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 140
Gly Asn Asn Leu Pro Ala Lys Phe Leu Glu Gly Phe Val Arg Thr
1 5 10 15

<210> 141
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 141
Ala Lys Phe Leu Glu Gly Phe Val Arg Thr Ser Asn Ile Lys Phe
1 5 10 15

<210> 142
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 142
Gly Phe Val Arg Thr Ser Asn Ile Lys Phe Gln Asp Ala Tyr Asn
1 5 10 15

<210> 143
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 143
Ser Asn Ile Lys Phe Gln Asp Ala Tyr Asn Ala Gly Gly Gly His
1 5 10 15

<210> 144
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 144
Gln Asp Ala Tyr Asn Ala Gly Gly Gly His Asn Gly Val Phe Asp
1 5 10 15

<210> 145
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 145
Ala Gly Gly Gly His Asn Gly Val Phe Asp Phe Pro Asp Ser Gly
1 5 10 15

<210> 146
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 146
Asn Gly Val Phe Asp Phe Pro Asp Ser Gly Thr His Ser Trp Glu
1 5 10 15

<210> 147
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 147
Phe Pro Asp Ser Gly Thr His Ser Trp Glu Tyr Trp Gly Ala Gln
1 5 10 15

<210> 148
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 148
Thr His Ser Trp Glu Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys
1 5 10 15

<210> 149
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 149
Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys Pro Asp Leu Gln Arg
1 5 10 15

<210> 150
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 150
Leu Asn Ala Met Lys Pro Asp Leu Gln Arg Ala Leu Gly Ala Thr
1 5 10 15

<210> 151
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 151
Pro Asp Leu Gln Arg Ala Leu Gly Ala Thr Pro Asn Thr Gly Pro
1 5 10 15

<210> 152
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 152
Ala Leu Gly Ala Thr Pro Asn Thr Gly Pro Ala Pro Gln Gly Ala
1 5 10 15

<210> 153
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 153
Phe Ser Arg Pro Gly Leu Pro Val Glu Tyr Leu Gln Val Pro Ser Pro
1 5 10 15

Ser Met

<210> 154
<211> 16
<212> PRT
<213> Mycobacterium tuberculosis

<400> 154
Asp Ile Lys Val Gln Phe Gln Ser Gly Gly Ala Asn Ser Pro Ala Leu
1 5 10 15

<210> 155
<211> 17
<212> PRT
<213> Mycobacterium tuberculosis

<400> 155
Pro Val Gly Gly Gln Ser Ser Phe Tyr Ser Asp Trp Tyr Gln Pro Ala
1 5 10 15

Cys

<210> 156
<211> 17
<212> PRT
<213> Mycobacterium tuberculosis

<400> 156
Ser Met Ala Ala Ser Ser Ala Leu Thr Leu Ala Ile Tyr His Pro Gln
1 5 10 15

Gln

<210> 157
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 157
Pro Gln Gln Phe Val Tyr Ala Gly Ala Met Ser Gly Leu Leu Asp Pro
1 5 10 15

Ser Gln

<210> 158
<211> 17
<212> PRT
<213> Mycobacterium tuberculosis

<400> 158
Cys Gly Asn Gly Lys Pro Ser Asp Leu Gly Gly Asn Asn Leu Pro Ala
1 5 10 15

Lys

<210> 159
<211> 16
<212> PRT
<213> Mycobacterium tuberculosis

<400> 159
Phe Gln Asp Ala Tyr Asn Ala Gly Gly Gly His Asn Gly Val Phe Asp
1 5 10 15

<210> 160
<211> 14
<212> PRT
<213> Mycobacterium tuberculosis

<400> 160
Pro Asp Leu Gln Arg Ala Leu Gly Ala Thr Pro Asn Thr Gly
1 5 10

<210> 161
<211> 325
<212> PRT
<213> Mycobacterium tuberculosis

<400> 161
Met Thr Asp Val Ser Arg Lys Ile Arg Ala Trp Gly Arg Arg Leu Met
1 5 10 15

Ile Gly Thr Ala Ala Ala Val Val Leu Pro Gly Leu Val Gly Leu Ala
20 25 30

Gly Gly Ala Ala Thr Ala Gly Ala Phe Ser Arg Pro Gly Leu Pro Val
35 40 45

Glu Tyr Leu Gln Val Pro Ser Pro Ser Met Gly Arg Asp Ile Lys Val
50 55 60

Gln Phe Gln Ser Gly Gly Asn Asn Ser Pro Ala Val Tyr Leu Leu Asp
65 70 75 80

Gly Leu Arg Ala Gln Asp Asp Tyr Asn Gly Trp Asp Ile Asn Thr Pro
85 90 95

Ala Phe Glu Trp Tyr Tyr Gln Ser Gly Leu Ser Ile Val Met Pro Val
100 105 110

Gly Gly Gln Ser Ser Phe Tyr Ser Asp Trp Tyr Ser Pro Ala Cys Gly
115 120 125

```
Lys Ala Gly Cys Gln Thr Tyr Lys Trp Glu Thr Phe Leu Thr Ser Glu
    130                 135                 140

Leu Pro Gln Trp Leu Ser Ala Asn Arg Ala Val Lys Pro Thr Gly Ser
145                 150                 155                 160

Ala Ala Ile Gly Leu Ser Met Ala Gly Ser Ser Ala Met Ile Leu Ala
                165                 170                 175

Ala Tyr His Pro Gln Gln Phe Ile Tyr Ala Gly Ser Leu Ser Ala Leu
            180                 185                 190

Leu Asp Pro Ser Gln Gly Met Gly Pro Ser Leu Ile Gly Leu Ala Met
        195                 200                 205

Gly Asp Ala Gly Gly Tyr Lys Ala Ala Asp Met Trp Gly Pro Ser Ser
    210                 215                 220

Asp Pro Ala Trp Glu Arg Asn Asp Pro Thr Gln Gln Ile Pro Lys Leu
225                 230                 235                 240

Val Ala Asn Asn Thr Arg Leu Trp Val Tyr Cys Gly Asn Gly Thr Pro
                245                 250                 255

Asn Glu Leu Gly Gly Ala Asn Ile Pro Ala Glu Phe Leu Glu Asn Phe
            260                 265                 270

Val Arg Ser Ser Asn Leu Lys Phe Gln Asp Ala Tyr Asn Ala Ala Gly
        275                 280                 285

Gly His Asn Ala Val Phe Asn Phe Pro Pro Asn Gly Thr His Ser Trp
    290                 295                 300

Glu Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser
305                 310                 315                 320

Ser Leu Gly Ala Gly
                325
```

<210> 162
<211> 338
<212> PRT
<213> Mycobacterium tuberculosis

<400> 162

```
Met Gln Leu Val Asp Arg Val Arg Gly Ala Val Thr Gly Met Ser Arg
  1               5                  10                  15

Arg Leu Val Val Gly Ala Val Gly Ala Ala Leu Val Ser Gly Leu Val
             20                  25                  30
```

```
Gly Ala Val Gly Gly Thr Ala Thr Ala Gly Ala Phe Ser Arg Pro Gly
         35                  40                  45

Leu Pro Val Glu Tyr Leu Gln Val Pro Ser Pro Ser Met Gly Arg Asp
     50                  55                  60

Ile Lys Val Gln Phe Gln Ser Gly Gly Ala Asn Ser Pro Ala Leu Tyr
 65                  70                  75                  80

Leu Leu Asp Gly Leu Arg Ala Gln Asp Asp Phe Ser Gly Trp Asp Ile
                 85                  90                  95

Asn Thr Pro Ala Phe Glu Trp Tyr Asp Gln Ser Gly Leu Ser Val Val
            100                 105                 110

Met Pro Val Gly Gly Gln Ser Ser Phe Tyr Ser Asp Trp Tyr Gln Pro
        115                 120                 125

Ala Cys Gly Lys Ala Gly Cys Gln Thr Tyr Lys Trp Glu Thr Phe Leu
    130                 135                 140

Thr Ser Glu Leu Pro Gly Trp Leu Gln Ala Asn Arg His Val Lys Pro
145                 150                 155                 160

Thr Gly Ser Ala Val Val Gly Leu Ser Met Ala Ala Ser Ser Ala Leu
                165                 170                 175

Thr Leu Ala Ile Tyr His Pro Gln Gln Phe Val Tyr Ala Gly Ala Met
            180                 185                 190

Ser Gly Leu Leu Asp Pro Ser Gln Ala Met Gly Pro Thr Leu Ile Gly
        195                 200                 205

Leu Ala Met Gly Asp Ala Gly Gly Tyr Lys Ala Ser Asp Met Trp Gly
    210                 215                 220

Pro Lys Glu Asp Pro Ala Trp Gln Arg Asn Asp Pro Leu Leu Asn Val
225                 230                 235                 240

Gly Lys Leu Ile Ala Asn Asn Thr Arg Val Trp Val Tyr Cys Gly Asn
                245                 250                 255

Gly Lys Pro Ser Asp Leu Gly Gly Asn Asn Leu Pro Ala Lys Phe Leu
            260                 265                 270

Glu Gly Phe Val Arg Thr Ser Asn Ile Lys Phe Gln Asp Ala Tyr Asn
        275                 280                 285

Ala Gly Gly Gly His Asn Gly Val Phe Asp Phe Pro Asp Ser Gly Thr
    290                 295                 300

His Ser Trp Glu Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys Pro Asp
305                 310                 315                 320
```

```
Leu Gln Arg Ala Leu Gly Ala Thr Pro Asn Thr Gly Pro Ala Pro Gln
                325                 330                 335

Gly Ala
```

<210> 163
<211> 159
<212> PRT
<213> Mycobacterium tuberculosis

<400> 163

```
Met Lys Leu Thr Thr Met Ile Lys Thr Ala Val Ala Val Val Ala Met
  1               5                  10                  15

Ala Ala Ile Ala Thr Phe Ala Ala Pro Val Ala Leu Ala Ala Tyr Pro
             20                  25                  30

Ile Thr Glu Lys Leu Gly Ser Glu Leu Thr Met Thr Asp Thr Val Gly
         35                  40                  45

Gln Val Val Leu Gly Trp Lys Val Ser Asp Leu Lys Ser Ser Thr Ala
     50                  55                  60

Val Ile Pro Gly Tyr Pro Val Ala Gly Gln Val Trp Glu Ala Thr Ala
 65                  70                  75                  80

Thr Val Asn Ala Ile Arg Gly Ser Val Thr Pro Ala Val Ser Gln Phe
                85                  90                  95

Asn Ala Arg Thr Ala Asp Gly Ile Asn Tyr Arg Val Leu Trp Gln Ala
            100                 105                 110

Ala Gly Pro Asp Thr Ile Ser Gly Ala Thr Ile Pro Gln Gly Glu Gln
        115                 120                 125

Ser Thr Gly Lys Ile Tyr Phe Asp Val Thr Gly Pro Ser Pro Thr Ile
    130                 135                 140

Val Ala Met Asn Asn Gly Met Glu Asp Leu Leu Ile Trp Glu Pro
145                 150                 155
```

<210> 164
<211> 478
<212> PRT
<213> Mycobacterium tuberculosis

<400> 164

```
Val Thr Glu Lys Thr Pro Asp Asp Val Phe Lys Leu Ala Lys Asp Glu
  1               5                  10                  15
```

```
Lys Val Glu Tyr Val Asp Val Arg Phe Cys Asp Leu Pro Gly Ile Met
            20                  25                  30

Gln His Phe Thr Ile Pro Ala Ser Ala Phe Asp Lys Ser Val Phe Asp
        35                  40                  45

Asp Gly Leu Ala Phe Asp Gly Ser Ser Ile Arg Gly Phe Gln Ser Ile
    50                  55                  60

His Glu Ser Asp Met Leu Leu Leu Pro Asp Pro Glu Thr Ala Arg Ile
65                  70                  75                  80

Asp Pro Phe Arg Ala Ala Lys Thr Leu Asn Ile Asn Phe Phe Val His
                85                  90                  95

Asp Pro Phe Thr Leu Glu Pro Tyr Ser Arg Asp Pro Arg Asn Ile Ala
            100                 105                 110

Arg Lys Ala Glu Asn Tyr Leu Ile Ser Thr Gly Ile Ala Asp Thr Ala
        115                 120                 125

Tyr Phe Gly Ala Glu Ala Glu Phe Tyr Ile Phe Asp Ser Val Ser Phe
    130                 135                 140

Asp Ser Arg Ala Asn Gly Ser Phe Tyr Glu Val Asp Ala Ile Ser Gly
145                 150                 155                 160

Trp Trp Asn Thr Gly Ala Ala Thr Glu Ala Asp Gly Ser Pro Asn Arg
                165                 170                 175

Gly Tyr Lys Val Arg His Lys Gly Gly Tyr Phe Pro Val Ala Pro Asn
            180                 185                 190

Asp Gln Tyr Val Asp Leu Arg Asp Lys Met Leu Thr Asn Leu Ile Asn
        195                 200                 205

Ser Gly Phe Ile Leu Glu Lys Gly His His Glu Val Gly Ser Gly Gly
    210                 215                 220

Gln Ala Glu Ile Asn Tyr Gln Phe Asn Ser Leu Leu His Ala Ala Asp
225                 230                 235                 240

Asp Met Gln Leu Tyr Lys Tyr Ile Ile Lys Asn Thr Ala Trp Gln Asn
                245                 250                 255

Gly Lys Thr Val Thr Phe Met Pro Lys Pro Leu Phe Gly Asp Asn Gly
            260                 265                 270

Ser Gly Met His Cys His Gln Ser Leu Trp Lys Asp Gly Ala Pro Leu
        275                 280                 285

Met Tyr Asp Glu Thr Gly Tyr Ala Gly Leu Ser Asp Thr Ala Arg His
    290                 295                 300
```

```
Tyr Ile Gly Gly Leu Leu His His Ala Pro Ser Leu Leu Ala Phe Thr
305                 310                 315                 320

Asn Pro Thr Val Asn Ser Tyr Lys Arg Leu Val Pro Gly Tyr Glu Ala
                325                 330                 335

Pro Ile Asn Leu Val Tyr Ser Gln Arg Asn Arg Ser Ala Cys Val Arg
            340                 345                 350

Ile Pro Ile Thr Gly Ser Asn Pro Lys Ala Lys Arg Leu Glu Phe Arg
        355                 360                 365

Ser Pro Asp Ser Ser Gly Asn Pro Tyr Leu Ala Phe Ser Ala Met Leu
    370                 375                 380

Met Ala Gly Leu Asp Gly Ile Lys Asn Lys Ile Glu Pro Gln Ala Pro
385                 390                 395                 400

Val Asp Lys Asp Leu Tyr Glu Leu Pro Pro Glu Glu Ala Ala Ser Ile
                405                 410                 415

Pro Gln Thr Pro Thr Gln Leu Ser Asp Val Ile Asp Arg Leu Glu Ala
            420                 425                 430

Asp His Glu Tyr Leu Thr Glu Gly Gly Val Phe Thr Asn Asp Leu Ile
        435                 440                 445

Glu Thr Trp Ile Ser Phe Lys Arg Glu Asn Glu Ile Glu Pro Val Asn
    450                 455                 460

Ile Arg Pro His Pro Tyr Glu Phe Ala Leu Tyr Tyr Asp Val
465                 470                 475
```

<210> 165
<211> 228
<212> PRT
<213> Mycobacterium tuberculosis

<400> 165

```
Val Arg Ile Lys Ile Phe Met Leu Val Thr Ala Val Val Leu Leu Cys
  1               5                  10                  15

Cys Ser Gly Val Ala Thr Ala Ala Pro Lys Thr Tyr Cys Glu Glu Leu
             20                  25                  30

Lys Gly Thr Asp Thr Gly Gln Ala Cys Gln Ile Gln Met Ser Asp Pro
         35                  40                  45

Ala Tyr Asn Ile Asn Ile Ser Leu Pro Ser Tyr Tyr Pro Asp Gln Lys
     50                  55                  60
```

```
Ser Leu Glu Asn Tyr Ile Ala Gln Thr Arg Asp Lys Phe Leu Ser Ala
 65                  70                  75                  80

Ala Thr Ser Ser Thr Pro Arg Glu Ala Pro Tyr Glu Leu Asn Ile Thr
                 85                  90                  95

Ser Ala Thr Tyr Gln Ser Ala Ile Pro Pro Arg Gly Thr Gln Ala Val
            100                 105                 110

Val Leu Lys Val Tyr Gln Asn Ala Gly Gly Thr His Pro Thr Thr Thr
        115                 120                 125

Tyr Lys Ala Phe Asp Trp Asp Gln Ala Tyr Arg Lys Pro Ile Thr Tyr
    130                 135                 140

Asp Thr Leu Trp Gln Ala Asp Thr Asp Pro Leu Pro Val Val Phe Pro
145                 150                 155                 160

Ile Val Gln Gly Glu Leu Ser Lys Gln Thr Gly Gln Gln Val Ser Ile
                165                 170                 175

Ala Pro Asn Ala Gly Leu Asp Pro Val Asn Tyr Gln Asn Phe Ala Val
            180                 185                 190

Thr Asn Asp Gly Val Ile Phe Phe Phe Asn Pro Gly Glu Leu Leu Pro
        195                 200                 205

Glu Ala Ala Gly Pro Thr Gln Val Leu Val Pro Arg Ser Ala Ile Asp
    210                 215                 220

Ser Met Leu Ala
225
```

<210> 166
<211> 299
<212> PRT
<213> Mycobacterium tuberculosis

<400> 166

```
Met Lys Gly Arg Ser Ala Leu Leu Arg Ala Leu Trp Ile Ala Ala Leu
  1               5                  10                  15

Ser Phe Gly Leu Gly Gly Val Ala Val Ala Ala Glu Pro Thr Ala Lys
             20                  25                  30

Ala Ala Pro Tyr Glu Asn Leu Met Val Pro Ser Pro Ser Met Gly Arg
         35                  40                  45

Asp Ile Pro Val Ala Phe Leu Ala Gly Gly Pro His Ala Val Tyr Leu
     50                  55                  60
```

```
Leu Asp Ala Phe Asn Ala Gly Pro Asp Val Ser Asn Trp Val Thr Ala
 65                  70                  75                  80

Gly Asn Ala Met Asn Thr Leu Ala Gly Lys Gly Ile Ser Val Val Ala
                 85                  90                  95

Pro Ala Gly Gly Ala Tyr Ser Met Tyr Thr Asn Trp Glu Gln Asp Gly
            100                 105                 110

Ser Lys Gln Trp Asp Thr Phe Leu Ser Ala Glu Leu Pro Asp Trp Leu
        115                 120                 125

Ala Ala Asn Arg Gly Leu Ala Pro Gly Gly His Ala Ala Val Gly Ala
    130                 135                 140

Ala Gln Gly Gly Tyr Gly Ala Met Ala Leu Ala Ala Phe His Pro Asp
145                 150                 155                 160

Arg Phe Gly Phe Ala Gly Ser Met Ser Gly Phe Leu Tyr Pro Ser Asn
                165                 170                 175

Thr Thr Thr Asn Gly Ala Ile Ala Ala Gly Met Gln Gln Phe Gly Gly
            180                 185                 190

Val Asp Thr Asn Gly Met Trp Gly Ala Pro Gln Leu Gly Arg Trp Lys
        195                 200                 205

Trp His Asp Pro Trp Val His Ala Ser Leu Leu Ala Gln Asn Asn Thr
    210                 215                 220

Arg Val Trp Val Trp Ser Pro Thr Asn Pro Gly Ala Ser Asp Pro Ala
225                 230                 235                 240

Ala Met Ile Gly Gln Ala Ala Glu Ala Met Gly Asn Ser Arg Met Phe
                245                 250                 255

Tyr Asn Gln Tyr Arg Ser Val Gly Gly His Asn Gly His Phe Asp Phe
            260                 265                 270

Pro Ala Ser Gly Asp Asn Gly Trp Gly Ser Trp Ala Pro Gln Leu Gly
        275                 280                 285

Ala Met Ser Gly Asp Ile Val Gly Ala Ile Arg
    290                 295
```

<210> 167
<211> 7
<212> PRT
<213> Mycobacterium tuberculosis

<400> 167
Phe Ser Arg Pro Gly Leu Pro
1 5